

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on August 6, 2003, and the references cited therewith.

No claims are amended, no claims are canceled, and no claims are added; as a result, claims 79-99 are now pending in this application.

Double Patenting Rejection

Claims 79-99 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,174,806 B1.

Claims 79 – 99 were rejected under a non-statutory double patenting rejection, specifically U. S. Patent No. 6,174,806 B1. Applicants will appropriately respond to the obviousness type double patenting rejection as soon as the final form of the claims has been established and the claims have been confirmed to be allowable over the prior rejections.

The §103 Rejection of the Claims

1. Claims 79-86 and 90-99 were rejected under 35 USC § 103(a) as being unpatentable over Wolf in view of Chu (U.S. 5,783,471) and further in view of Dobson (U.S. 5,527,561) and Chittipeddi et al. (U.S. 5,147,820) and Cheng et al. (U.S. 5,891,805).
2. Claims 87-89 were rejected under 35 USC § 103(a) as being unpatentable over Wolf in view of Chu (U.S. 5,783,471) and further in view of Dobson (U.S. 5,527,561) and Chittipeddi et al. (U.S. 5,147,820) and Cheng et al. (U.S. 5,891,805) as applied to claims 79-86 and 90-99 above, and further in view of Gardner et al. (U.S. 5,679,585).

The first rejection repeats the combination of Wolf, Chu and Dobson that was described in the Office Action of February 4, 2003. Additionally, Chittipeddi and Cheng et al were added to the rejection in response to Applicant's challenge to the patents of the first rejection as to the taking of "official notice" in the prior rejection. The second rejection adds Gardner et al to the five patents now forming the first rejection. Applicant respectfully traverses the both new rejections which combine elements asserted by the Office Action to be found in Wolf, Chu, Dobson, Chittipeddi and Cheng et al. for the reasons already set forth in Applicants Amendment

and Response filed May 5, 2003 (the contents of which are hereby incorporated herein by reference) and for the additional reasons set forth below.

Applicant appreciates the Examiner's citation of the Chittipedi and Cheng et al patents to as providing support for certain features which were stated in the prior Office Action to be facts of which "official notice" was being taken. Whatever the additional patents may be contended to show, the Office Action is still defective in failing to point to any evidence in one of the cited patents or elsewhere that one of ordinary skill in the art at the time that the invention was made would have provided a suggestion or motivation to combine prior art teachings the manner that the Office Action proposes. The failure to provide such evidence of a motivation or suggestion to combine elements asserted to be present in Wolf, Chu, Dobson, Chittipeddi and Cheng et al demonstrates that the obviousness rejection is defective since it fails to establish a *prima facie* showing of obviousness.

In the "Response to Arguments" at page 8 of the Office Action the Examiner responded to Applicant's prior challenge as to the lack of evidence of motivation or suggestion to combine, stating:

"In this case, a *prima facie* case of obviousness has been established by the above rejections and an effective rebuttal to overcome the *prima facie* case of obviousness has not been provided. (sentence bridging pages 6 and 7)"

Clearly the Office Action has mistaken where the burden lies in this case. Notwithstanding the Examiner's conclusory statement, there has been no evidence presented in the Office Action showing a motivation or suggestion to combine the five separate patents cited. The failure to provide that sort of showing means that the Examiner has failed to meet the burden of establishing a *prima facie* case of obviousness. Since the Examiner has not made out a *prima facie* case of obviousness, the burden has not shifted to Applicant to demonstrate non-obviousness.

The Office Action relies upon the cited Wolf text as showing "Al-TiN-Ti-Si contacts." The Office Action contends that Wolf shows forming the contacts by depositing a layer of Ti, followed by forming titanium nitride there over, annealing to react the titanium with the substrate and form titanium silicide; and forming an overlying aluminum or tungsten layer.

The first Office Action had taken “official notice” that “annealing to form the silicide layer in an inert or nitrogen ambient and the particular aspect ratio of the trench” is “well known in the art to be used to prevent contamination of the device structure and that the claimed aspect ratio was commonly used at the time the invention was made”. After Applicant traversed this taking of “official notice” the Examiner provided the Chittipedi et al patent, contending it describes “forming a silicide film through an anneal in a nitrogen atmosphere.” (Page 5) Cheng et al was cited as disclosing “..that it is desirable to form contact holes with an aspect ratio of greater than 2:1 (citing col 2 lines 6-13 of that patent). (page 5) No evidence of a teaching or suggestion to combine the patents has been pointed to in the Office Action. In fact, the reasons given in explanation of a suggestion or motivation to combine are mere conclusions:

“In view of there disclosures, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the process of Wolf modified by Chu and Dobson (and presumably Chittipedi et al and Cheng et al) so as to form a silicide by anneal in a nitrogen atmosphere and to form a contact hole with an aspect ration of greater than 2:1 because high aspect ratio contact holes are desirable in semiconductor processing and annealing in an inert atmosphere such as nitrogen to form a silicide is a suitable method to form a contamination free silicide film. (page 5)”

Applicant respectfully notes that there is still no showing pointing to evidence of a teaching anywhere which provides the suggestion or motivation to combine prior art teachings as the Office Action proposes. The Office Action does not state a *prima facie* case of obviousness because of its failure to provide evidence of a teaching or suggestion to combine aspects of the prior art as proposed in the Office Action.

Reconsideration and allowance of the rejected claims is respectfully requested

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6970 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date

October 31, 2003

By

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O.Box 1450, Alexandria, VA 22313-1450, on this 31st day of October, 2003.

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Signature

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